ANNUAL REPORT 1990-1991

Water Resources Commission

Alberta
WATER RESOURCES
COMMISSION

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Office of the Chairman

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The Honourable Rick Orman
Chairman, Cabinet Committee
on Economic Planning

Sir:

I have the honour to present the Annual Report of the Water Resources Commission for the year ending March 31, 1991.

Respectfully submitted,

Alan Hyland

Alan Hyland, M.L.A.
Chairman

Alberta
ENERGY

Office of the Minister

228 Legislature Building, Edmonton, Alberta, Canada T5K 2B6 403/427-3740

His Honour Gordon Towers
Lieutenant-Governor
of the Province of Alberta

Sir:

I have the honour to hereby transmit the Annual Report of the Water Resources Commission for the year ending March 31, 1991.

Respectfully submitted,

Rick Orman
Minister

The Alberta Water Resources Commission recognizes the many challenges involved in sound water management. It is the Commission's view that Alberta's water resources should be managed in a manner that will ensure water is available for a variety of uses. Further, water should be available in sufficient quantity and at an acceptable standard of quality to support these uses into the foreseeable future.

The quality and quantity of water is of primary importance to a healthy environment and the high quality of life enjoyed by Albertans. Water is also essential to the economic viability of the province. The Commission believes that environmental protection and improvement, natural resources conservation, and a healthy economy are compatible goals.

Multiple use of water should continue to be a guiding principle in Alberta. This means managing the resource to accommodate a variety of water uses. In some cases, certain water uses may have priority and not all uses may be satisfied. A multiple use approach includes consideration of water quality in relation to other water management objectives.

Water quality protection and improvement are, in themselves, objectives of the Commission. Water quality is important for human health, ecological well-being, and a variety of other water uses essential to our high quality of life. Good water management must view quality and quantity as complementary features.

It is essential that the planning and management for both land and water uses be integrated. Urban, agriculture, forestry and other land use practices may alter the suitability of water for other uses within a watershed. Albertans need to understand that water is more than another resource – it is part of the functioning environment of the province.

Genuine and open public consultation is essential to the development of water management plans and policies. In keeping with this, the Commission is guided by the following principles: two-way communication should be undertaken in a spirit of openness and trust, and public input is an important and legitimate part of resource planning and management.

The Water Resources Commission Act was passed in 1983 in recognition of the need to manage Alberta's water in a coordinated manner and for the benefit of multiple users. Under the Act, the Commission was established and its mandate defined for a five-year period. The Act was amended in 1987, extending this mandate for an additional five years.

ROLE AND RESPONSIBILITIES

Under the Water Resources Commission Act, the Commission is responsible for advising the Alberta government regarding the following:

- long-term water resource planning in relation to agricultural, economic, community and environmental factors;
- evaluations of specific short- and long-term water resource projects;
- intergovernmental negotiations affecting the water resources of Alberta; and
- the administration and general policy of the government regarding water resources.

The Commission's role is to advise on policy matters, in support of the province's water management objectives. In this way, the Commission assists departments that are involved in the administration and management of water to make decisions. The Commission provides a forum to examine water resource issues that affect a wide spectrum of users and involve a number of disciplines.

The Commission also provides financial support to water management research and public awareness projects. Priority is placed on topics that support the Commission's water management principles. Projects are supervised and partially funded by the departments represented on the Commission, and are frequently undertaken by private-sector consulting firms.

MEMBERSHIP AND REPORTING LINE

The membership of the Alberta Water Resources Commission is composed of representatives from the Legislative Assembly, the public-at-large, and five provincial government departments at the assistant deputy minister level:

- Agriculture – Mr. Doug Radke
- Economic Development and Trade – Mr. Stan Schellenberger (replacing Dr. Brian Sullivan, May 1990)
- Environment – Mr. Peter Melnychuk
- Forestry, Lands and Wildlife – Mr. Murray Turnbull (replacing Mr. Les Cooke, May 1990)
- Municipal Affairs – Mr. John McGowan (replacing Mr. Dennis Surrendi, July 1990)

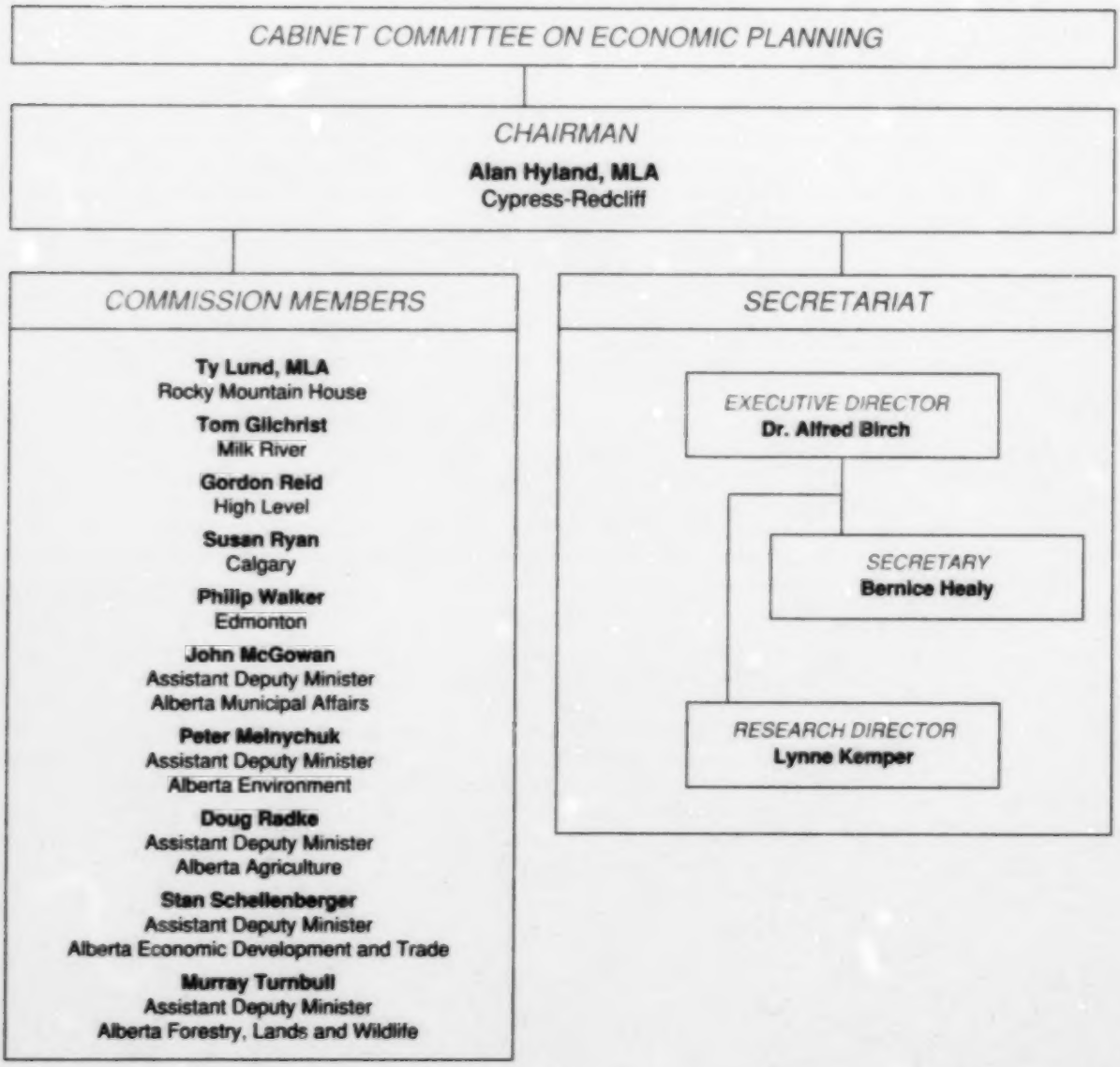
Two members of the Legislative Assembly are appointed by the Lieutenant Governor in Council. The MLA for Cypress-Redcliff, Mr. Alan Hyland, was Chairman of the Commission during the 1990-91 period. Mr. Ty Lund, MLA for Rocky Mountain House, was appointed as a Commission member in October 1990, replacing Mr. Mike Cardinal, MLA for Athabasca-Lac La Biche.

Four persons, appointed by the Lieutenant Governor in Council, represent the public-at-large. These members for 1990-91 were Mr. Tom Gilchrist, a rancher from Milk River; Mr. Gordon Reid, a retired businessman from High Level; Mrs. Susan Ryan, a homemaker and geographer from Calgary; and Mr. Phil Walker, a retired city commissioner from Edmonton.

The Alberta Water Resources Commission reports to the Provincial Cabinet through the Cabinet Committee on Economic Planning. From time to time, representations are made to other Cabinet members and caucus committees, as appropriate. The Commission is not directly affiliated with any provincial department.

In administrative matters, the Commission reports to the Executive Council of the provincial government. Staff support to the Commission is provided by a secretariat consisting of an executive director, research director, and secretary. Dr. Alfred Birch was the Executive Director for the reporting period.

ALBERTA WATER RESOURCES COMMISSION
ORGANIZATION CHART
MARCH 31, 1991



POLICY DEVELOPMENT AND LEGISLATION REVIEW

Wetland Management and Conservation Policy

Development of a draft government policy for wetlands in the settled area of Alberta continued to be a major focus of the Alberta Water Resources Commission during 1990-91.

The draft policy document, ***Wetlands: Values and Options: A Draft Policy for the Management of Wetlands in the Settled Area of Alberta***, and a background document, ***Wetland Management in the Settled Area of Alberta: Background for Policy Development***, were released for public review. Meetings were held with several organizations and local governments to inform them about the draft policy and the public consultation process.

Approximately 3600 copies of the draft policy were distributed to interest groups and individuals. A response form was included with the draft policy to encourage public comments. Between October 25 and November 29, 1990, open houses and public workshops on the draft policy were held at the following locations:

Lethbridge	Two Hills
Brooks	Bonnyville
Calgary	Barrhead
Innisfail	Grande Prairie
Castor	McLennan
Wainwright	Fairview
Edmonton	Fort Vermilion

These meetings began with an open house at which members of the public received information on wetland management and the draft policy, and discussed their views with the Commission members. The open house was followed by a workshop session during which small group discussions were facilitated by Commission members and government staff to identify problems and potential solutions. The meetings concluded with a plenary session and reports on the small group discussions.

Suggestions on wetland management were compiled from comments received from the 470 persons who attended the public workshops, the 35 letters and briefs submitted, and the 175 response forms completed and returned. An 88 page report, ***Wetland Management in the Settled Area of Alberta: Summary of Public Comments***, was prepared for printing and public distribution.

Public comments were wide-ranging, constructive and reflected the diversity and complexity of wetland management issues. The need for wetland conservation and increased recognition of wetland values by society was widely supported, as was the need for fair recognition of landowner interests. The following were other topics of discussion: incentives for wetland retention on private land, wetland inventories and definitions, ownership of wetlands,

drainage, regional and local differences in wetland management needs, education, landowner and municipal involvement in wetland management, cooperation and program coordination.

The Commission and the interdepartmental steering committee that prepared the draft policy considered all comments carefully, and initiated the revision of the draft policy accordingly.

Review of Water Resources Policy and Legislation

In January 1991, the Honourable Ralph Klein, Minister of Environment, asked the Alberta Water Resources Commission to assist in a public review of the water management policy and the provincial Water Resources Act. The Commission agreed to chair the public workshops scheduled for the fall of 1991, and to provide recommendations to the government on a new draft policy and legislation.

Alberta Environment and the Commission prepared, for Cabinet approval, a proposed consultation plan for the public review of the water resources policy and legislation. This plan included the preparation and release of a discussion paper on the Water Resources Act, and a series of detailed background papers on a range of related water management issues. The discussion paper, prepared by Alberta Environment and reviewed and approved by the Commission, outlined how water management is carried out by the government, identified some current and future issues, and presented questions and alternatives for discussion.

In addition, Alberta Environment and the Commission developed a survey to gather the public's views and concerns with respect to water management. Information collected through this survey was intended to assist in the design of public workshops.

Irrigation Expansion Guidelines

The Alberta Water Resources Commission, along with representatives from Alberta Environment, Alberta Agriculture and the Irrigation Council, participated in a series of information meetings for irrigation districts and groups of farmers interested in irrigation development. These meetings focused on the guidelines for irrigation expansion in the South Saskatchewan River Basin which were announced by Cabinet in May 1990.

In recognition of the fact that the demand for water exceeds the available supply, the guidelines established a maximum irrigated area of 1.7 million acres in the South Saskatchewan River Basin. The guidelines give direction to the planning, licencing and development of irrigation in the basin while protecting valuable instream flows and water supplies for other users.

A commitment was made by the Government of Alberta to review and update the licences for the irrigation districts to reflect the guidelines. The guidelines will be reviewed in the year 2000 in light of licenced water allocation at that time.

Canadian Heritage Rivers System

The federal-provincial Canadian Heritage Rivers System was established to recognize important rivers and to ensure the conservation of their natural, historic or recreational values. Rivers nominated for the system need not be only pristine or found in wilderness areas, in fact, they can flow through major cities or other developed areas. Designation of an entire river or a specific section does not preclude economic development. If development occurs, the watercourse should be managed in a manner consistent with objectives of the program and the features that led to its designation should be protected. In addition, public views and recommendations are an important part of river management planning and program implementation. These planning and implementation functions remain provincial responsibilities.

The Alberta Water Resources Commission received a report from Alberta Environment and Alberta Recreation and Parks on Alberta's possible participation in the Canadian Heritage Rivers System. This report discussed and made recommendations on such topics as administrative arrangements, provincial approval of river nomination and management plans, and public participation in the selection and planning processes.

The Commission carefully considered the nature of the Canadian Heritage Rivers System and the implications of Alberta's possible participation. Based on this, the Commission expressed to Cabinet its general support for such participation. In addition, it stated some of the factors that should be considered in deciding when to participate, and indicated the potential role of Cabinet in selecting rivers and approving management plans for them.

Beaver Management Policy Review

Through Agricultural Service Boards, the provincial and municipal governments spend close to $1.4 million annually on beaver control. Despite this, beaver problems in Alberta have continued to increase. Municipal governments are faced with many damage complaints from landholders, as well as coping with damage to municipal property. They are also frustrated by the different levels of control among adjacent municipalities, the lack of access to private land to carry out beaver control, the increasing costs of control programs, and the confusion about provincial policy and departmental responsibilities. A more coordinated approach to beaver control among provincial and municipal governments, guided by a clear management policy, is necessary.

As a result of the above problems, Alberta Environment requested that the Commission study and make recommendations regarding possible changes to the existing beaver control policy and programs. The Commission agreed to undertake such a review with the participation and assistance of the departments of Environment, Forestry, Lands and Wildlife, Agriculture and Municipal Affairs.

Commission staff chaired an interdepartmental committee representing these departments. During the reporting period, this committee collected information on the extent and location of beaver problems and the current control efforts. A report was then initiated, and recommendations were made for a coordinated beaver management policy.

Water Quality Considerations

Several times during the year, the Commission received and discussed information on water quality and related water management issues. In northern Alberta, water quality considerations typically involve industrial or municipal effluents. The impact of these effluents on river water quality may be complicated by low flows and ice cover during the winter. Progress is being made to develop ambient, or instream, quality objectives.

In southern Alberta, ambient conditions are affected by naturally lower flows and relatively larger water withdrawals. The impacts of municipal discharge may be significant and increased wastewater treatment will be needed to improve downstream water quality conditions and to deal with higher effluent loads associated with the increasing population.

The Commission was informed that the Alberta Surface Water Quality Objectives were being reviewed, with objectives being revised or new objectives developed as necessary. This review process involves extensive technical investigation and public and government consultation. As a result of pulp mill development in northern Alberta and nutrient discharges and low summer flows to southern rivers, dissolved oxygen and mercury were identified as the first water quality parameters to be examined.

Water quality considerations are also an increasingly important part of transboundary water management. The Commission was briefed on a draft water quality agreement under the Prairie Provinces Master Agreement on Apportionment. The specific water quality objectives within the draft agreement are based on existing provincial and federal water quality guidelines. The intent is to develop specific objectives for each basin that would recognize natural and human activity impacts on water quality. The Commission discussed the general implications of these objectives on water uses such as human consumption, fisheries and irrigation, and on costs relative to the treatment of municipal, industrial and other effluent sources.

WATER RESOURCE INVESTIGATION AND PLANNING

Instream Flow Needs Study

The Water Resources Commission continued to support this interdepartmental project to establish and protect instream flow needs. The Commission is represented on an Instream Flow Needs Task Force chaired by Alberta Environment. During the year, work focused on several priority rivers.

Research and planning on the Highwood River (a tributary of the Bow River) resulted in a recommendation of flow levels based on fish habitat, flushing flow requirements for maintenance of spawning areas, and water quality criteria. Operating guidelines were also developed for the diversion structures on the river.

Technical studies were conducted during the year on Willow Creek and the Belly, St. Mary and Waterton rivers (tributaries of the Oldman River) and on the Bow River. These studies collected information on flow requirements for fisheries, recreation and water quality. Currently, instream flow needs studies are being conducted on the Peace River, and the results will be used in discussions with British Columbia regarding flow management of that river.

A review was initiated on the general strategy for determining instream flows in light of project experience to date. A revised strategy would describe a process for determining instream flow needs for major instream uses and human consumptive uses, and would guide the development of instream flow recommendations for specific rivers.

On-Farm Water Management Study

The objectives of this study are to document the costs, benefits, hydrologic and wildlife impacts and operational details of five on-farm water management alternatives, as well as to provide demonstration projects for producers and local authorities. The emphasis is on sound alternatives to conventional drainage. The study is directed by an interdepartmental team representing Alberta Agriculture, Alberta Environment, Alberta Forestry, Lands and Wildlife, Alberta Municipal Affairs and the Commission.

During the reporting period, the fieldwork focused on three of the original six study sites:

- a "controlled drainage" site near Fairview, at which methods of limiting water outflow from a drained, cultivated field are being investigated;
- a slough consolidation site near Rycroft, at which wildlife effects are being investigated; and
- a slough consolidation site near Stettler, at which impacts on a cereal grain operation are being studied.

Sub-Basin Water Management Planning Program

The Alberta Water Resources Commission reviewed the findings of this planning program, which was continued in 1990/91. The program was initiated to address drainage, erosion and flood control, and wildlife habitat loss in northwestern Alberta. The objective of the program is to develop plans that conserve and protect the water resources of the region, and guide local and provincial government agencies in water resource management.

Three phases of the study have been completed: a review and cataloguing of the drainage and erosion control problems in the region; conceptual plans and cost estimates for water management; and the development of implementation plans for two of the identified water management units (the Little Burnt River and Spirit River).

The main elements of the plans and the process include the following: local initiation, a local planning team, description of ecological constraints (hydrology, habitat, soils, etc.), identification of issues and problems, location of structural solutions, location of land purchase options, location of habitat maintenance areas, public land management and landowner compensation.

The major results identified in the two water management unit plans completed during 1990/91 were:

- the projected cost of implementing plans is very high, though variable;
- public support exists for wildlife preservation and for water retention as a strategy to manage peak flows;
- there is a need to develop cost effectiveness criteria for future planning;
- there is a need to integrate Crown and private land management with water management; and
- commitment to this planning process exists at the local government and MLA levels.

Funding decisions for project implementation and further planning in other locations will need to be resolved. It appears that this approach could be used as a model for integrated land and water management in other sub-basins.

Special Areas Water Supply Study

The Commission continued to provide financial support and participate in the management of this study, which is to examine the feasibility of supplying water from the Red Deer River to the Special Areas for domestic, livestock, environmental, recreational and supplemental irrigation purposes.

Work continued on Phase II of the study to investigate the costs and impacts of two alternate canal routes. The pipeline and canal routes were examined with special attention to construction and land costs, and projected impacts on farmland. Several areas of environmental investigation were initiated under the heading of an environmental overview. An institutional analysis was also initiated, including an assessment of organizational options for operation of the project after construction.

PUBLIC AWARENESS

A number of public awareness activities complemented the Water Resources Commission's policy development and research activities.

- **Water Education Institute**

The Commission served as a sponsoring agency and assisted in the development of a two-week water management course for teachers. This initiative was led by the Friends of Environmental Education Society of Alberta as part of its Fellowship in Environmental Education. The pilot session for the course was planned for the University of Lethbridge during the summer of 1991. The intention of the course was to give teachers a better understanding of water management issues and how they relate to each other, to land use management planning, and to economic and social decisions.

- **Flowing to the Future**

The Commission provided financial and staff assistance to the second Flowing to the Future conference and workshop entitled: "Ribbons of Life: The River, the Land and Us", planned for Edmonton in April 1991. The Conference will combine a seminar and workshop format with a view to developing recommendations as the conference's input to the review of the Water Resources Act.

- **Atlas of Alberta Lakes**

The Commission provided staff assistance in the preparation of the *Atlas of Alberta Lakes*, which was published November 1990.

ISSUES AND ACTIVITIES

During the course of Commission activities for the year, which included 11 regular meetings and 1 special workshop, a number of other water-related issues were considered and follow-up action taken or recommendations made.

- **Irrigation Rehabilitation and Expansion Program** The Commission reviewed proposed terms of reference under which the Irrigation Rehabilitation and Expansion Program might be extended. Discussion included possible changes to the formula for allocating provincial funds and the need for adequate maintenance of irrigation works. The high cost of rehabilitation and the long-term objectives of the program were carefully considered.

- **Irrigation Amendment Act (Bill 32)** The Commission reviewed the proposed amendments to the Irrigation Act which, with the approval of the Lieutenant Governor in Council, would allow an irrigation district to undertake business or development activities not permitted under the existing act. Requirements for approval will be stringent in order to protect district water users.

- **Environmental Protection and Enhancement Act (Bill 53)** The Commission reviewed the draft legislation for the Alberta Environmental Protection and Enhancement Act which consolidates nine of Alberta's existing environmental acts into one integrated act to provide an overall framework for environmental protection and enhancement. A number of important features are incorporated into the bill in response to public input received through a broad consultation process. The Commission provided comments on the draft bill and on the coordination of this legislative review with that of the Water Resources Act.

- **Natural Resources Conservation Board Act (Bill 52)** The draft legislation would establish a board to review certain natural resource development projects. The board would be responsible for reviewing economic, social and environmental effects of projects, and would seek to balance economic growth with environmental protection. The Commission reviewed and provided comments on the bill.

- **Oldman Dam** The Commission periodically reviewed the legal and construction status of the dam.

- **Transboundary Issues** Information on the Mackenzie River Basin Committee and the Prairie Provinces Water Board was received and reviewed by the Commission.

- **Purple Loosestrife** The Commission discussed the threat of the spread in Alberta of purple loosestrife, a dangerous weed which could seriously harm provincial wetlands. Support was offered for an active and interdepartmental approach to eradicate the plant from Alberta.

■ **Conferences and Tours** Commission members and staff attended a wide range of conferences, meetings and tours in order to keep abreast of current issues, needs and developments regarding water management. In some cases, organizational assistance or leadership was provided by the Commission. These events related to such things as transboundary and international water resource issues, national actions on wetland management, integrated river basin management, transferable water rights, environmental perspectives on water management, public consultation techniques and lake management in Alberta.

ALBERTA WATER RESOURCES COMMISSION
PROJECT EXPENDITURES: 1990/91

Project	Expenditure $ '000
Instream Flow Needs Study	111.2
On-Farm Water Management Study	185.0
Review of Water Resources Policy and Legislation	32.8
Special Areas Water Supply Study	50.0
Water Education Institute	4.8
Wetland Management and Conservation Policy	102.2
Total	**486.0**